
Two Taxonomic Innovations in South American *Gentianella* (Gentianaceae)

James S. Pringle

Royal Botanical Gardens, P.O. Box 399, Hamilton, Ontario, Canada L8N 3H8. jpringle@rbg.ca

ABSTRACT. *Gentianella undulatisepala* J. S. Pringle, a new species from Bolivia, is described for the Gentianaceae. It is distinguished from other solitary-flowered species in La Paz Department by its long pedicels and the undulate margins of its calyx lobes. *Gentianella arenarioides* (Gilg) J. S. Pringle is restored to accepted taxonomic status, with the name neotypified, and the new nomenclatural combination is published.

RESUMEN. Se describe por las Gencianáceas *Gentianella undulatisepala* J. S. Pringle, una nueva especie de Bolivia. Se diferencia de las otras especies de flores solitarias en el Departamento de La Paz por los pedicelos largos y los márgenes ondulados de los lóbulos del cáliz. *Gentianella arenarioides* (Gilg) J. S. Pringle se restaura al estado taxonómico aceptado, con el nombre neotypificado, y la combinación de nomenclatura nueva se publica.

Key words: Bolivia, Gentianaceae, *Gentianella*, IUCN Red List, Peru.

New species of *Gentianella* Moench continue to be discovered in the Andes of South America, and additional collections of previously described taxa permit improvements in the classification of *Gentianella* in this region of its greatest diversity. In the present study, one new species is described and another is restored to taxonomic acceptance and nomenclaturally transferred.

1. *Gentianella arenarioides* (Gilg) J. S. Pringle, comb. nov. Basionym: *Gentiana arenarioides* Gilg, Repert. Spec. Nov. Regni Veg. 2: 39. 1906. TYPE: Peru. Cajamarca: Prov. Cajamarca, Cajamarca–Bambamarca rd., 55 km N of Cajamarca, 78°35'W, 6°55'S, natural grassland, glaciated terrain, 3750 m, 2 June 1984, *D. N. Smith & I. Sánchez Vega 7433* (neotype, designated here, MO; isotype, HAM).

Distribution. As no specimens of *Gentianella arenarioides* were previously known to be extant, three other collections are cited here, two from

Cajamarca Department and one that extends the known range to La Libertad Department.

IUCN Red List category. Data remain deficient for any recommended status in the IUCN Red List (Data Deficient [DD], IUCN, 2001).

Discussion. *Gentiana arenarioides* (1906) was described from a single specimen formerly at Berlin (B), no longer extant, *A. Weberbauer 3995* (B images at F and MO), from Cajamarca, Peru. No other specimens so identified were subsequently cited by Macbride (1959). Fabris (1958) included this name at species rank in the synonymy of *Gentianella graminea* (Kunth) Fabris, noting that the depth of calyx lobing, used by Gilg (1916) as a key character to distinguish these species, is variable and does not differ significantly between the two. In Brako and Zarucchi (1993), I accepted this synonymy, but from the study of specimens seen more recently I conclude that these species are distinct. *Gentianella arenarioides* differs from *G. graminea* in that its flowers are generally solitary, rarely in twos or threes, on peduncles or pedicels 2–10 cm long. In *G. graminea*, even the shorter stems generally bear a corymboid inflorescence of three to eight or more flowers, and the central pedicels are generally less than 2.5 cm, although the lowest are sometimes longer. The corolla lobes of *G. arenarioides* are widely spatulate to obovate, 1.4–1.8× as long as wide, widest at 0.65–0.8× their length, while those of *G. graminea* are oblanceolate, 2–3× as long as wide, widest at 0.55–0.6× their length. The transition from the crowded basal leaves to the widely spaced cauline leaves is more abrupt in *G. arenarioides* than in *G. graminea*.

Gilg (1906) and Macbride (1959) noted the similarity of *Gentiana arenarioides* to *G. tristicha* Gilg (now *Gentianella tristicha* (Gilg) J. S. Pringle, within which I here include *G. lilacina* (Gilg) Zarucchi and *G. mesembryanthemoides* (Gilg) T. N. Ho & S. W. Liu) of Ancash Department. Plants of *G. tristicha* are larger than those of *G. arenarioides*, with stems usually over 20 cm tall, mostly whorled leaves 1–2.5(–3) mm wide, and three to many flowers per stem. The stems of *G. arenarioides* are generally less

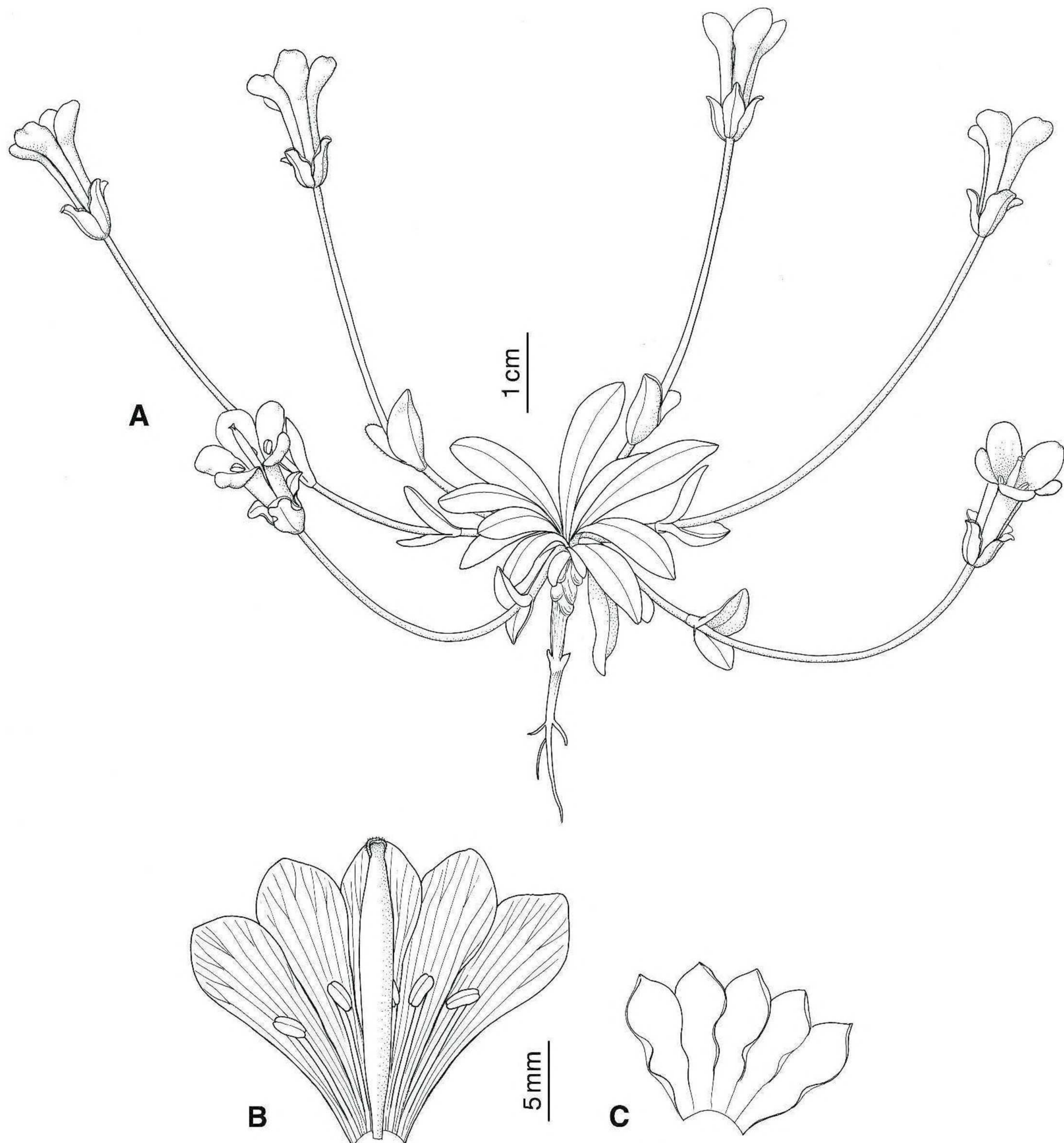


Figure 1. *Gentianella undulatisepala* J. S. Pringle. —A. Flowering plant. —B. Corolla, adaxial view, with stamens and pistil. —C. Calyx, abaxial view. Drawn from the holotype, X. Menhofer X-1827 (HAM).

than 20 cm, and the leaves of the flowering stems are opposite and narrower, 0.8–1.2 mm wide.

Additional specimens examined. PERU. **Cajamarca:** A. López M. *et al.* 7834 and 7842 (HUT not seen, MO); I. Sánchez V. *et al.* 12708 (CPUN not seen, F, HAM); D. N. Smith & I. Sánchez V. 4267 (MO); M. Weigend *et al.* 98/525 (MO). **La Libertad:** A. López M. & A. Sagástegui A. 8188 (HAM, HUT not seen, MO).

2. *Gentianella undulatisepala* J. S. Pringle, sp. nov.

TYPE: Bolivia. La Paz: Prov. B. Saavedra, pajonal humedo y poco pastoreado en el camino de Charazani a Huayrapata, 3950 m, 12 Jan.

1983, X. Menhofer X-1827 (holotype, HAM; isotype, LPB, digital image seen). Figure 1.

Herba perennis caespitosa inter *Gentianellas* bolivianas floribus solitariis atque corolla pro maxima parte alba lobis quam tubo longioribus praeditis pedunculis longioribus, lobis calycis marginibus valde undulatis etiam corolla fere omino alba distiguenda.

Caespitose perennial, apparently spreading as new tufts of stems arise from rhizomes; vegetative rosettes present along with flowering stems, the latter concurrently 1 to 4, decumbent, 1–6 cm long below

peduncle. Leaves of flowering stems in 1 to 4 pairs, separated by internodes to 3 cm. Leaves elliptic to narrowly obovate or occasionally nearly linear, 3-nerved but with only the midrib prominent, $8\text{--}16 \times 1.5\text{--}5$ mm, apices abruptly acute; bases of proximal leaves connate-sheathing 1.5–2 mm, distal cauline leaves with shorter sheaths or scarcely sheathing; decurrent margins forming narrow, sharp ridges on sheaths and on stem below nodes. Leaf and calyx-lobe margins thickened, these and ridges on stem below leaf margins minutely papillose-denticulate. Flowers usually solitary, occasionally with a second flower axillary or on a very short branch, erect; peduncles 25–55 mm, purple. Calyx 7–12 mm, green, midveins and commissural veins ridged, these and margins contrastingly outlined with purple; calyx lobes ovate-oblong to elliptic, $5\text{--}8 \times 1\text{--}2.6$ mm, mostly $1.5\text{--}3\times$ as long as the tube, abruptly acute, margins undulate; corolla obconic-campanulate, 15–20 mm, white, without markings or suffusions or with slight purple suffusion along veins near base, glabrous within; corolla lobes obovate, $12\text{--}16 \times 4\text{--}6$ mm, $3\text{--}4\times$ as long as tube, $2.8\text{--}3.5\times$ as long as wide, rounded to subacute at apex; stamen filaments inserted at ca. $0.2\times$ the height of the corolla; ovarian stipe not sharply differentiated, ca. 2 mm at flowering time. Fruit not seen.

Habitat and phenology. *Gentianella undulatisepala* is known only from the type collection. Information on its habitat is limited to the label data, quoted above. The January date of this collection provides the only information available on its phenology.

IUCN Red List category. Data are deficient for the recommended listing, according to the IUCN Red List criteria (DD or Data Deficient, IUCN, 2001).

Etymology. *Gentianella undulatisepala* is named for the undulate margins of the calyx lobes, which, to a North American botanist, are reminiscent of the leaves of *Asclepias amplexicaulis* Sm. (Apocynaceae).

Discussion. *Gentianella undulatisepala* is a distinctive species, not obviously most closely related to any one of the several other Bolivian species of *Gentianella* with solitary flowers, largely white corollas, and corolla lobes longer than the tube, of

which those most similar to *G. undulatisepala* are noted below. It differs from all other such species in its much longer peduncles; in the other Bolivian *Gentianella* species sharing those traits, the peduncles are generally less than 25 mm. It also differs from all other such species in its ovate-oblong to elliptic, abruptly acute calyx lobes with undulate-fluted margins; in the other species mentioned below, the calyx lobes are lanceolate to ovate-triangular, tapering more gradually toward the apex, and the margins of the calyx lobes are flat. In contrast to the almost completely white corollas of *G. undulatisepala*, the corollas of *G. bockii* (Gilg) T. N. Ho & S. W. Liu and *G. neomandonii* (R. C. Foster) T. N. Ho & S. W. Liu are predominantly white with a dark blue-violet zone near the base of the lobes and the veins are prominently outlined in blue-violet. In *G. sandiensis* (Gilg) J. S. Pringle, the corolla lobes are white with a rather sharply demarcated violet zone along or near the outer margin, extending to the apex. *Gentianella briquetiana* (Gilg) T. N. Ho & S. W. Liu is similar to *G. sandiensis*, but differs from both that species and *G. undulatisepala* in its widely ovate calyx lobes, which are distinctly shorter than the tube.

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